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the small buds and joints, loose bark, etc., of the smaller, smooth limbs. In addition, it can be said in favor of both these birds that they are inclined to remain in one vicinity and do not wander far from it, but steadily and thoroughly work over one feeding ground.

Possibility and Desirableness of Partial Domestication.

Both these birds are very easily approached, and may readily be lured to orchards or shade trees,—they are quite common upon the shade trees of Lansing and, as stated before, are very tame on the campus.

It is, then, self-evident, that by every means they should be encouraged, by placing food for them till they become at home, by erecting suitable nesting sites, and by careful protection, to feed and nest in the orchards. It might be interesting to try the experiment of destroying as many old Woodpecker holes as possible and by placing suitable nesting sites in the orchard to thus entice them. Yet, in general, the old holes in which they nest should not be all cut out when securing fire wood, but a sufficient number be allowed to remain. If the farmer will take a very little time now and then in thus attracting these feathered insect-destroyers to his orchard, he will soon find very little if any need for insecticides except for extraordinary attacks. "An ounce of prevention is worth a pound of cure" is truly more applicable to the destruction of insect life than to almost any other phenomena.



NOTES ON CERTAIN SPECIES OF MEXICAN BIRDS.

BY E. W. NELSON.

THE WORK done on Mexican birds for the Biological Survey of the U. S. Department of Agriculture has added to the previously known range of many species and furnishes material for elucidating the relationships of others.

In order to render some of this information available to those interested I have prepared the following notes. In connection with the extension of the range of various species previously unknown north of Guatemala it may be stated that the highlands of Chiapas are a continuation of the elevated interior of the former country. The climate and vegetation of the two districts are essentially the same, and they are so much alike in general character that an equally close similarity is to be expected in the bird life.

Oreophasis derbianus Gray. — We found this magnificent bird in the heavy forest on the west base of the Volcano of Santa Maria, near Quetzaltenango, Guatemala, and again in the similar forests below Pinabete, Chiapas. Previously it has been recorded, I believe, only from the Volcano de Fuego, Guatemala.

Penelopina nigra (Fras.). — This beautiful species was not uncommon in the dense forest at Tumbala, Chiapas. Like the preceding species it was known previously only from Guatemala.

Pharomacrus mocinno De La Llave. — A pair of Quetzals was seen near Tumbala, in eastern Chiapas, where they were reported to be resident in small numbers. I heard of them again in the mountain forests east of Tuxtla, Chiapas.

Sittasomus sylvioides Lafr. — A single specimen was taken on March 17, 1897, at San Sebastian in western Jalisco, where it was very uncommon. This is its first record for northwestern Mexico.

Pachyrhamphus major (Cab.). — A single specimen was obtained by us at Plomosas, Sinaloa, July 14, 1897, and adds the species to the fauna of this part of Mexico.

Pyrgisoma rubricatum xantusi (Lawr.). — *Pyrgisoma xantusi* was described by Mr. Lawrence (Ann. Lyc. N. Y., VIII, 480, 1866) from a specimen taken by Xantus in the mountains of Colima. The type is in the National Museum and agrees with a large series of specimens from various localities between Colima and Mazatlan in western Mexico. These birds are distinguished from those found in southern Puebla, supposed to be typical, by their decidedly larger size and much browner colors. The difference is sufficient to distinguish them from the typical form as a well marked geographical race. I have specimens of *P. r. xantusi* before me from the States of Colima, Jalisco, Sinaloa and the Territory of Tepic.

The general resemblance is so close between the figure of *Pyrgisoma kieneri* Bp., in the 'Exotic Ornithology' (p. 130, pl. 65), and some of the larger specimens of *Pyrgisoma rubricatum xantusi* that it leads me to have a strong suspicion of their identity. *Pyrgisoma kieneri* was published in a signature of the 'Conspectus Avium' (I, p. 486), dated July 20,

1850, and thus has priority over *Atlapetes rubricatus* Cabanis, published in a signature of the 'Museum Heineanum' (I, p. 140) dated May, 1851. Should my surmise regarding the identity of these birds prove to be well founded then *P. rubricatum* becomes a geographical race of *P. kieneri* and *P. rubricatum xantusi* is a pure synonym of *P. kieneri*. In his description of the latter bird Bonaparte gives its habitat as western America.

Pipilo maculatus Sw. — In our collection from Mt. Orizaba, Puebla, and the surrounding region are numerous specimens representing both sexes of *Pipilo maculatus* Sw. The females in this series are typical representatives of *Pipilo orizabæ* Cox (Auk, 1894, p. 161), which was described from a summer bird in worn plumage erroneously labeled male. The evidence furnished by a careful comparison of the type with our series is conclusive that *P. orizabæ* is based upon a wrongly sexed specimen of *P. maculatus* and it becomes, in consequence, a synonym of the last named species.

Arremonops rufivirgata sumichrasti (Sharpe). — *Embernagra sumichrasti* Sharpe, Cat. Bds. Brit. Mus., XII, p. 762 (in text), 1888.

Specimens before me from the west coast of Mexico show that Sharpe's bird is a well marked geographical race of *Arremonops rufivirgata*. It ranges from the border of Chiapas north along the west coast of Mexico to the State of Colima.

Arremonops chloronota Salvin. — We obtained this species at Yajalon in eastern Chiapas, thus adding it to the fauna of Mexico.

Chlorospingus postocularis Cab. — The type of this species came from Guatemala, and I find that my *C. atriceps* (Auk, Jan. 1897, p. 65), from Pinabete, Chiapas, is too closely related to it to be separated. The latter becomes in consequence a synonym of *C. postocularis*, the range of which extends through the mountains of southwestern Guatemala and Chiapas.

Chlorospingus olivaceus (Bp). -- Not uncommon in the dense forest at Tumbala, Chiapas.

Piranga bidentata Swainson, and *Piranga sanguinolenta* Lafresnaye. — Recent writers agree in considering Lafresnaye's *Piranga sanguinolenta* a synonym of Swainson's *Piranga bidentata*. But the collections of birds made in Mexico for the United States Department of Agriculture, contain material which, studied in connection with the specimens in the U. S. National Museum, appears to prove the specific distinctness of these birds. The misapprehension of their true relationship appears to have arisen from the rarity of *P. bidentata* in collections, whereas specimens of *P. sanguinolenta* have been common. The two species once confounded, the error has been perpetuated through lack of material for their proper discrimination.

Piranga bidentata was described by Swainson in the 'Philosophical Magazine' for 1827 (p. 428) from a specimen taken by Bullock at Temascaltepec, Mexico. It was said to be "golden on head, neck and under-

parts," and this description applies to the Tanagers inhabiting the arid tropical mountain slopes of southwestern Mexico only including the Tres Marias Islands. Temascaltepec is situated southwest of the City of Mexico, on the Pacific slope of the main Cordillera.

Piranga sanguinolenta was described by Lafresnaye in the 'Revue Zoologique' for 1839 (p. 97) as coming from 'Mexico.' It was said to have the head and neck blood red with the lower surface of body cinnabar red. Tanagers with this style of coloration inhabit the humid tropical region of Vera Cruz and range thence south through tropical Guatemala and other parts of Central America to Chiriqui. During my field work in Mexico I have found each of these birds restricted to a definite faunal region, and apparently without intergrading, although further work may prove them to be geographical races of the same species.

The most striking difference between the males is the distinctly orange shade of *bidentata* contrasted with the rosy-scarlet or red shade of *sanguinolenta*. The two may be distinguished by the following descriptions:

Piranga bidentata.—Adult male: Head, neck and lower parts, including under tail-coverts, rich cadmium orange, with a richer or more reddish shade on crown, throat and breast; flanks duller or more brownish; feathers of back blackish brown edged with dark orange, and sometimes greenish yellow; rump ochraceous brown; wings and tail blackish brown; greater and lesser wing-coverts tipped with white spots, forming two well defined white wing-bands; outer pair of tail-feathers tipped with white for about one-third of length, mainly along inner web. Three adult males from Jalisco and Sinaloa average as follows: Wing, 98; tail, 79.3; culmen, 17.3; tarsus, 21.1.¹

Adult female: The cadmium orange area of male is replaced by greenish yellow with a faint orange wash on breast. Back, wings and tail grayish brown; rump brown, washed with dark greenish yellow; outer tail-feathers with white tips much smaller than on males, occupying only about the terminal fifth of inner web.

Piranga sanguinolenta.—Adult male: Head, neck and lower part orange vermillion, becoming intense, flaming rosy scarlet on many specimens; back and rump brownish, heavily shaded with the general red color; wings and tail blackish brown; two conspicuous white wing-bands formed by white tips to greater and lesser wing-coverts; outer web of tertials white-spotted at tips; outer pair of tail-feathers tipped with white spots about as in *P. bidentata flammea*. Four adult males average as follows: Wing, 97.2; tail, 79.7; culmen, 16.2; tarsus, 21.4.

Comparing the measurements of the two species it will be noted that *sanguinolenta* has a smaller bill and proportionately longer tarsus. The females of the two species are more nearly alike than the males, but those of *sanguinolenta* may be distinguished by their more intense coloration and the small amount of white on the outer tail-feathers.

¹All measurements are in millimeters.

The synonymy of *Piranga bidentata* should stand as follows:

Piranga bidentata Sw. Phil. Mag. 1827, p. 428; SCL. P. Z. S. 1856, p. 126 (part); 1857, p. 205 (part); 1859, p. 364 (part); *Ibid.* Syn. Av. Tan. p. 50 (part); *Ibid.* Cat. Am. Bds. p. 82 (part); SCL. and SALVIN, Nomencl. p. 82 (part); FINSCH, Abh. Nat. Ver. z. Bremen, II, p. 388 (N. W. Mexico); RIDGW. Man. N. Am. Bds. 1887, p. 456 (part).

The synonymy of *Piranga sanguinolenta* is as follows:

Piranga sanguinolenta LAFR. Rev. Zool. 1839, p. 97; BP. Consp. I, p. 241 (1850).

Piranga bidentata SCL. P. Z. S. 1856, p. 126 (part—Jalapa); 1857, p. 205; 1859, p. 364; *Ibid.* Syn. Av. Tan. p. 50 (part); *Ibid.* Cat. Am. Bds. p. 82, (part); SCL. and SALVIN, Ibis, 1860, p. 32 (Guatemala); *Ibid.* Nomencl. p. 82 (part); CASSIN, Proc. Ac. Sci. Phil. 1865, p. 171 (Costa Rica); SALVIN, P. Z. S. 1870, p. 187 (Chiriqui); LAWR. Ann. Lyc. N. Y. IX, p. 99 (Costa Rica); SUMICHR. Mem. Boston Soc. N. H., I, p. 549 (Vera Cruz); FRANTZIUS, Journ. f. Orn. 1869, p. 299 (Costa Rica); SALVIN and GODMAN, Biol. Cent.-Am. Aves, I, p. 296 (part—all east Mexican and Central American references); RIDGWAY, Man. N. Am. Birds, p. 456 1887. (part); CHAPM. Bull. Am. Mus. Nat. Hist. X, p. 27 (Feb. 1898.)

Ph [ænicosoma] bidentata CABANIS, Mus. Hein. I, p. 24. (1850?)

Compsothlypis inornatus (Bd.).—Common in the high forests of eastern Chiapas, near Tuxtla Gutierrez.

Dendroica decora (Ridgw.).—Specimens were taken by us near Tonala, Chiapas, and at Santo Domingo, Oaxaca, on the Isthmus of Tehuantepec.

Setophaga miniata flammea (Kaup).—Common in the highland forests of Chiapas.

Setophaga picta guatemalæ Sharpe.—Not uncommon in pine forests of interior Chiapas.

Ergaticus versicolor Salv.—Common on the highlands of central Chiapas.

Basileuterus culicivorus (Licht.).—Not uncommon in the mountains of western Jalisco where we took specimens near San Sebastian. We found it also at Pluma in western Oaxaca.

Basileuterus belli (Gir.).—Common in the mountains of western Mexico. We took specimens near Chilpancingo, Guerrero, and at San Sebastian, Jalisco. These records add the two last named species to the fauna of western Mexico.

Mimus gracilis lawrencei (Ridgw.).—We found *Mimus gracilis* ranging over all the open parts of the interior of Chiapas and thence down to the Pacific coast, where in the region about the Isthmus of Tehuantepec, it merges into *Mimus lawrencei*. *M. gracilis* also ranges along the east

coast of Mexico from Yucatan to the Isthmus. Specimens from the vicinity of Coatzacoalcas, Vera Cruz, are intermediate between *gracilis* and *lawrencei*. From the foregoing it becomes evident that *M. lawrencei* is merely a geographical race of *M. gracilis*.

Heleodytes gularis (Scl.).—The collection made by us during 1897 contains several specimens of this bird from the mountains of southern Sinaloa and the western slope of the Nayarit Mts. in the Territory of Tepic. The surmise of the authors of 'Biologia,' based on the make up of the skin, that the type came from Floresí probably gives the true source of this specimen. Floresí lived for years at Bolaños, Jalisco, on the eastern side of the Nayarit range, whence he obtained various species of birds, and Bolaños is, no doubt, the type locality of the present species.

On comparing the type of my *Heleodytes occidentalis* with the specimens taken in Sinaloa and Tepic I find that it is the same bird and must stand as a synonym of *H. gularis*. As the type of *H. occidentalis* came from the Sierra Nevada de Colima, Jalisco, and Salvin and Godman have recorded the capture of *H. gularis* in the mountains of Sonora it gives this species a wide range in northwestern Mexico.

Catherpes mexicanus albifrons (Gir.). *Certhia albifrons* Giraud, Sixteen Sp. Tex. Bds. t. 18, 1841.

The Cañon Wrens of the lower Rio Grande Valley and northeastern Mexico are readily separable from typical *C. mexicanus* which occupies the Mexican tableland. As Giraud's *Certhia albifrons* was presumably from the southern part of Texas his name becomes applicable to distinguish the bird of this region subspecifically from typical *mexicanus*. *C. mexicanus albifrons* is found along the lower Rio Grande, in Texas, and in the States of Nuevo Leon and Tamaulipas, Mexico. Thence southward over the tableland, to the Isthmus of Tehuantepec, typical *mexicanus* is the resident form.

Parus sclateri Kleins. (J. f. O. XLV, 133 (in text) 1897).—The specific term *meridionalis* being preoccupied for an Old World species, as noted by Kleinschmidt (loc. cit.) the latter author proposes the name *sclateri* to replace it for the Mexican Chickadee.

Regulus satrapa olivaceus Bd. *Regulus satrapa aztecus* RIDG. (ex Lawr. Mss.) Man. Bds. N. Am. p. 612 (appendix) 1887.

An examination of the material at hand proves that Mr. Lawrence's '*R. s. aztecus*' was based on a winter specimen of *R. s. olivaceus*.

Poliophtila cœrulea mexicana (Bp.). LITTLE BLUE GRAY GNATCATCHER. *Culicivora mexicana* BP. Consp. Av. I, p. 315 (1850).

In 1850 Bonaparte named a Gnatcatcher from Mexico which he described as being similar to *cœrulea* but smaller. This name has been treated as a synonym of the latter species by all recent writers. Our work in the lowlands of Vera Cruz, during the spring of 1894, revealed the presence of a small resident race of *P. cœrulea* which is undoubtedly Bonaparte's bird and worthy of recognition with subspecific rank.

Distribution. — Coast lowlands of Vera Cruz, south to eastern Chiapas and perhaps Yucatan.

Description. — Similar to *P. cærulea* from which it differs in generally smaller size, proportionately longer bill, and the tendency to obsolescence of black border to forehead in breeding male. An autumnal male from eastern Chiapas lacks the black on forehead and has a large white tip on 4th pair of rectrices. The breeding birds from Vera Cruz have the white confined to the first 3 pairs of rectrices.

Average measurements of P. cærulea from the eastern United States :

Ad. ♂ (5 specimens): wing, 53.4; tail, 50.2; culmen, 10.7; tarsus, 17.5.

Ad. ♀ (5 specimens): wing, 51.6; tail, 51; culmen, 10.3; tarsus, 17.8.

Averages of P. c. mexicana from lowlands of Vera Cruz and Yajalon, Chiapas.

Ad. ♂ (5 specimens): wing, 49.8; tail, 47.2; culmen, 10.6; tarsus, 16.6

Ad. ♀ (2 specimens): wing, 47.5; tail, 45; culmen, 10.5; tarsus, 16.5.

Catharus frantzii alticola (SALV. & GODM.) — The specimens before me appear to prove that *Catharus alticola* is entitled to rank as a geographical race only and its relationship is expressed in the name given above. We took specimens of it on the Volcano of Santa Maria, Guatemala, and at Pinabete, Chiapas, thus adding it to the fauna of Mexico.

Merula leucauchen SCL. — This bird occurs northward from Guatemala at least to the Isthmus of Tehuantepec. In this latter district we obtained specimens near Santo Domingo, Oaxaca. Although recent authors have treated *M. leucauchen* as a synonym of *M. tristis* the bird is certainly distinct. It may be only a subspecies of *tristis* but the specimens at hand appear to indicate its specific distinctness.

Merula plebeius (Cab.). — We took specimens of this species at Pinabete, Chiapas, where it was rather common. Until we obtained the present specimens it was unknown north of Costa Rica. The birds from Chiapas are not typical and may represent a geographical race of the Costa Rican bird.

Sialia sialis guatemalæ Ridgw. — Common on the highlands of Chiapas.